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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/827,371
Filing Date: April 6, 2001
Appellant: HUNG

Theodore R. Allen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on August 22, 2007 appealing from the Office action mailed March 14, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

In view of Appellant's persuasive argument, the rejection of cancelled Claim 7 and Claims 23, 24 and 27 under 35 USC § 112, first paragraph, is hereby withdrawn because the Examiner finds that the claimed subject is enabled by the specification.

In view of Appellant's persuasive argument, the rejection of Claims 1 and 22 made under 35 USC §102(b) as being anticipated by Love et al. (US 6,221,622) is hereby withdrawn by the Examiner because Love et al. does not teach, suggest or

motivate one of ordinary skill in the art to provide a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient comprising administering intraductally to the patient an agent that increases secretion of ductal fluid into a breast duct, as disclosed by Appellant.

In view of Appellant's persuasive argument, the rejection of Claims 1, 6, 22, 25 and 27 made under 35 USC §102(b) as being anticipated by Falconer et al. (Falconer, I.R. et al. "Effect of Prolactin on Sodium and Potassium Concentrations in Mammary Alveolar Tissue"; Endocrinology, vol. 101, no. 1 (1977), pp 181-186.) is hereby withdrawn because the teachings of Falconer et al. are concerned with a series of investigations in which changes in mammary tissue content of monovalent ions are measured following treatment with prolactin or ouabain, and treatment with prolactin and ouabain together.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,339,433	**KARTINOS et al.**	**7-1982**
6,235,305	**MULLINS**	**5-2001**

Nikodem, V.C. et al. "Do Cabbage Leaves Prevent Breast Engorgement? A Randomized, Controlled Study"; Birth, vol. 20 (June 1993), pp 61-64.

The Plant Book, 2nd Edition, 1997. Cambridge University Press, The United Kingdom, D.J. Mabberley, pp i.

Martyn, P. et al. "The Effect of Progesterone on Prolactin Stimulation of Fatty Acid Synthesis, Glycerolipid Synthesis and Lipogenic-Enzyme Activities in Mammary Glands of Pseudopregnant Rabbits, After Explant Culture of Intraductal Injection"; Biochemistry Journal, vol. 231 (1985), pp. 321-328.

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1, 6, 22 and 26 stand rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for preparing for intraductal retrieval of fluid, cells and/or other material from a breast duct of a patient comprising intraductally to the patient an effective of mannitol that increases the ductal fluid collection from a breast duct of a patient, does not reasonably provide enablement for the claim-designated method comprising the intraductal administration of any and all amounts of any and all of the agents recited in the Markush group of Claim 1. The specifications does not enable any person skilled in the art to which it pertains, or with it is most nearly connected, to make and/or use the invention commensurate in scope with these claims, as broadly claimed by Appellant.

A method for increasing retrievable intraductal retrievable fluid, cells and/or other material from a breast duct of a patient comprising administering intraductally to the

patient an agent that increases the secretion of ductal fluid into a breast duct, wherein the agent is selected from the group consisting of a hypotonic solution, a buffered solution, a nonabsorbable biocompatible solution, a protein, a colloid, a sugar, a polymer, mannitol, sorbitol, glucose, glycerol, sucrose, raffinose, fructose, lactulose, polyethyleneglycol (PEG), maltodextrin, dextran, dextran 70, hydroxyethyl starch, fluid gelatin, a synthetic colloid, an antibody, a binding protein, albumin, a hormone, a natural herb, an extract from a natural herb, silymarin, a surfactant, a growth factor, oxytocin, prolactin, an organic molecule, a muscle relaxant, and a ductal orifice dilator is claimed. Dependent claims are drawn to a method, wherein the agent is in a state selected from the group consisting of a non-liquid, a gel, an emulsion a gas and a semi-solid; wherein the agent is a nonabsorbable biocompatible solution; and, wherein the agent is an extract from a natural herb.

The factors to be considered in determining whether undue experimentation is required are summarized in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) (a) the breadth of the claims; (b) the nature of the invention; (c) the state of the prior art; (d) the level of one of ordinary skill in the art; (f) the amount of direction provided by the inventor; (g) the existence of working examples; and (h) the quantity of experimentation added to make or use the invention based on the content of the disclosure. While all of these factors are considered, a sufficient number are discussed below so as to create a *prima facie* case.

Nature of the Invention. The claims are drawn to a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient

comprising administering to the patient an agent that increases the secretion of ductal fluid into a breast duct, wherein the agent is selected from the group consisting of a hypotonic solution, a buffered solution, a buffered solution, a nonabsorbable compatible solution, a protein, a colloid, a sugar, a polymer, mannitol, sorbitol, glucose, glycerol, sucrose, raffinose, fructose, lactulose, polyethyleneglycol (PEG), maltodextrin, dextran 70, hydroxyethyl starch, fluid gelatin, a synthetic colloid, an antibody, a binding protein, albumin, a hormone, a natural herb, an extract from a natural herb, silymarin, a surfactant, a growth factor, oxytocin, prolactin, an organic molecule, a muscle relaxant, and a ductal orifice dilator.

Breadth of the Claims. The claims are broad in that any and all amounts of the claim-designated agents as recited in the Markush group of Claim 1 are intraductally administered to a patient to provide a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient, wherein the intraductal administration of the claim-designated agents increases secretion of ductal fluid into a breast duct. The complex nature of the subject matter of the invention is clearly exacerbated by the breadth of the claims.

Guidance of the Specification and Existence of Working Examples. While Appellant has reasonably demonstrated a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient comprising the intraductal administration of effective amount of mannitol that increases the amount of ductal fluid in the breast duct, Appellant has not demonstrated a method for increasing retrievable fluid, cells and/or other material from a breast duct of a patient comprising

the intraductal administration of any and all of the agents recited in the Markush group of Claim 1 in any and all amounts to provide the claim-designated functional effect to increase secretion of ductal fluid into a breast duct of a patient. For instance, on page 14 of the specification, line 20 to page 16, Appellant exemplifies a method of intraductally administering an effective amount of mannitol in water to the breast of a rabbit to provide a method the claim-designated functional effect to increase ductal fluid secretion. However, Appellant has not demonstrated a method for increasing retrieval intraductal fluid, cells and/or other material from a breast of a patient comprising the intraductal administration of any and all of the claim-designated agents in any and all amounts, wherein the intraductal administration of any and all of the claim-designated agents in any and all amounts increase secretion of ductal fluid into the breast of a patient as broadly claimed by Appellant.

Predictability and State of the Art. While it may be possible that particular agents recited in the Markush group of Claim 1 would increase the secretion of ductal fluid into a breast duct of a patient, it is highly unlikely that any and all of the claim-designated agents in any and all amounts could increase secretion of ductal fluid into a breast duct. The Office notes that on page 5, lines 20-24, Appellant expressly states, "The invention is the discovery that by first artificially increasing the fluid volume or fluid reservoir in a breast duct one can collect sufficient ductal fluid for analysis of the duct and breast." On page 8 of the specification, lines 3-24, it appears that Appellant discloses that the intraductal administration of some of the claim-designated agents may not indeed increase secretion of ductal fluid but rather increase or at least maintain the amount of

collectable fluid already present in the lumen of the breast duct. It should be noted that the state of the art at the time the invention was made did not recognize that all of the instantly claimed agents could increase the secretion of ductal fluid into the breast of a duct. For instance, Nikodem et al. (Nikodem, V.C. et al. "Do Cabbage Leaves Prevent Breast Engorgement? A Randomized, Controlled Study"; Birth, vol. 20 (June 1993), pp 61-64.) teach that cabbage leaf extract discourages the secretion of fluid into the breast duct of a patient.

Amount of Experimentation Necessary. There is no guidance in the specification, other than the administration of effective amounts of mannitol to increase ductal fluid secretion from a breast duct. Moreover, the instant application does not provide a working example providing data, which shows that the compositions of the instant claims would indeed increase secretion of fluid into a breast duct of a patient comprising the administration of any and all of the claim-designated agents in any and all amounts. Thus, Appellant has not demonstrated that any and all of the claim-designated agents have the claimed functional effect of increasing secretion of ductal fluid into a breast duct of a patient when intraductally administered to provide the instantly claimed method as broadly claimed, other than the aforementioned intraducal administration of effective amounts of mannitol. Accordingly, it would take undue experimentation without a reasonable expectation of success for one skill in the art to make and/or use the method as broadly claimed by Appellant.

In view of the breadth of the claims and the lack of guidance provided by the specification as well as the unpredictability of the art, it would take undue

experimentation without a reasonable expectation of success for the skilled artisan to make and/or use the instantly claimed method. Contrary to Appellant's arguments, the quantity of experimentation necessary to carry out the claimed invention is high, as the skilled artisan could not rely on the prior art or instant specification to make and/or use the instantly claimed method comprising the intraductal administration of any and all of the claim-designated agents in any and all amounts to the breast duct of a patient to provide the functional effect of increasing secretion of ductal fluid into a breast duct. Therefore, not all of the claims are considered to be full enabled by the instant specification.

Appellant argues that the Examiner has indicated enabling embodiments of the specification; and, therefore, one could easily conclude that the administration of high molecular weight hygroscopic agents would potentially increase the amount of ductal fluid within the breast duct of a patient. However, Appellant's argument is neither persuasive nor commensurate in scope to the limitations of the claimed invention because not all of the claim-designated agents recited in the Markush group of Claim 1, as well as dependent claims therefrom, are necessarily hygroscopic agents. Moreover, nowhere in the specification as originally filed does Appellant expressly suggest the intraducal administration of hygroscopic agents to the breast of a patient to provide the instantly claimed method of treatment. While Appellant argues it must be remembered that a claim can encompass 'inoperative' embodiments so long as one of ordinary skill can ascertain this without undue experimentation, Appellant is directed to MPEP 2164.08(b) that states the following:

"Although, typically, inoperative embodiments are excluded by language in a claim (e.g., preamble), the scope of the claim may still not be enabled where undue experimentation is involved in determining those embodiments that are operable. A disclosure of a large number of operable embodiments and the identification of a single inoperative embodiment did not render a claim broader than the enabled scope because undue experimentation was not involved in determining those embodiments that were operable. In re Angstadt, 537 F.2d 498, 502-503, 190 USPQ 214, 218 (CCPA 1976). However, claims reading on significant numbers of inoperative embodiments would render claims nonenabled when the specification does not clearly identify the operative embodiments and undue experimentation is involved in determining those that are operative. Atlas Powder Co. v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 1577, 224 USPQ 409, 414 (Fed. Cir. 1984); In re Cook, 439 F.2d 730, 735, 169 USPQ 298, 302 (CCPA 1971)."

In the instant case, the constituents recited in the Markush of Claim 1 are directed to a plethora of possible agents characterized by divergently different chemical constituents or by divergently different botanical extracts that have or possibly could have divergently different biological and/or biochemical functions other than increasing the secretion of ductal fluid into the breast duct of patient when intraductally introduced thereto. Appellant has identified a single operable embodiment but the claims read on significant numbers of possible inoperative embodiments and therefore the claims are rendered nonenabled because the specification as originally filed does not clearly identify the operative embodiments (other than the aforementioned enabled agents) and undue experimentation is involved in determining those that are operative. For example, Claim 1 and Claim 26 recite "a natural herb" and/or "an extract from a natural herb" as agents for use in the instantly claimed method. However, the only herbal

extract recited in Claim 1 is "silymarin". The Office notes that at the time of filing the present invention, the state of the art of botany recognized numerous genera found in the various known plant families (which may comprise a plethora of subfamilies). Yet, the claims as drafted are rather broad in scope - - the broadness not being supported by the description with examples. For instance, D. J. Mabberley lists over 20,000 entries on every family and genus of seed-bearing plant, including gymnosperms plus ferns and other pteridophytes in *The Plant* Book, 2nd Edition, 1997. Cambridge University Press, The United Kingdom. Given that Appellant's invention is predicated upon the idea that the intraductal administration of a myriad of possible natural herbs or natural herbal extracts derived from a great number of plant families and genera thereof having various complex properties and compounds obtained therefrom, it would take undue experimentation without a reasonable expectation of success as how to identify and how to determine the source of the plant, the solvents used in the making of the plant extract, and how to determine the plant parts used in the making of an herbal extract, such that it would it have the functional effect to increase the secretion of ductal fluid into a breast duct of a patient when intraductally administered thereto, as instantly claimed by Appellant. The Office further notes that Claim 1 also recites a buffered solution as an agent for use in the instantly claimed method. However, by way of demonstration even Appellant readily discloses that the intraductal administration of phosphate buffered saline to the breast duct of a patient was not useful in the secretion of ductal fluid into the breast duct of the treated patient when administered in any and all amounts. *See* Table III on page 15.

In view of the breadth of the claims and the lack of guidance provided by the specification as well as the unpredictability of the art and lack of a sufficient number of working examples, it would take undue experimentation without a reasonable expectation of success for the skilled artisan to make and/or use the instantly claimed method, as broadly claimed by Appellant.

Claims 1, 6, 22, 25 and 27 stand rejected under 35 U.S.C. 102(b) as being anticipated by Martyn et al. made evident by the teachings of Kartinos et al. and Mullins.

A method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient comprising administering to the patient an agent that increases the secretion of ductal fluid into a breast duct, wherein the agent is selected from the group consisting of a hypotonic solution, a buffered solution, a buffered solution, a nonabsorbable compatible solution, a protein, a colloid, a sugar, a polymer, mannitol, sorbitol, glucose, glycerol, sucrose, raffinose, fructose, lactulose, polyethyleneglycol (PEG), maltodextrin, dextran 70, hydroxyethyl starch, fluid gelatin, a synthetic colloid, an antibody, a binding protein, albumin, a hormone, a natural herb, an extract from a natural herb, silymarin, a surfactant, a growth factor, oxytocin, prolactin, an organic molecule, a muscle relaxant, and a ductal orifice dilator. Dependent claims are drawn to a method, wherein the agent is in a state selected from the group consisting of a non-liquid, a gel, an emulsion, a gas and a semi-solid; wherein the agent is a nonabsorbable biocompatible solution; wherein the agent is selected from the group consisting of polyethyleneglycol (PEG), maltodextrin, dextran, and dextran 70; and,

wherein the agent is selected from the group consisting of a growth factor, oxytocin, and, prolactin.

Martyn teaches a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient comprising administering intraductally to the patient prolactin as either an emulsion or an aqueous solution, made by dissolving prolactin in NaOH and diluting with phosphate buffered saline containing Blue Dextran (a nonabsorbable biocompatible solution, as evidenced by the teachings of Kartinos and Mullins). The emulsion was prepared by sonicating an aqueous solution phase consisting of phosphate buffer saline containing bovine serum albumin and Blue Dextran with safflower oil (see page 323. Column 2, under *"Mammary intraductal injections"*. In Table 1, Martyn shows that glycerolipid synthesis in the mammary gland was significantly enhanced in the presence of insulin, corticosterone and prolactin; addition of prolactin stimulated acetyl-CoA carboxylase activity; prolactin together with insulin and corticosterone stimulated activity of fatty acid synthetase; glucose-6-phosphate dehydrogenase was enhanced with prolactin injection. On page 326, Column 1, lines 9-27, Martyn teaches that intraductal injection of prolactin, or prolactin plus progesterone, had more secretion than did untreated emulsion treated or progesterone-treated glands within the same patient.

The reference anticipates the claimed subject matter.

(10) Response to Argument

With respect to the rejection of Claims 1, 6, 22 and 26 made under 35 U.S.C. 112, first paragraph, Appellant argues that since Appellant has provided the experimental protocol for the administration of a high molecular weight hydroscopic agent, namely mannitol, to a breast duct, one of skill in the art could easily conclude that intraductal administration of other agents having physical characteristics similar to those of mannitol would potentially increase the amount of ductal fluid within the breast duct. Appellant further argues that by examining Claim 1, one of skill in the art would identify the examples of high molecular weight hydroscopic agents set forth in the Markush of Claim 1, for example sorbitol, glucose, glycerol, sucrose, raffinose, fructose, lactulose, and dextran; and, thereby the skilled artisan would be able to easily introduce any of the aforementioned agents into a breast duct of a patient to test for an increase in intraductal fluid, since Appellant has provided the experimental protocol for the administration of agents to a breast duct (or an animal model). Appellant asserts, "Such an assessment would be routinely performed in the art". Thus, Appellant concludes that inoperative embodiments encompassed by Claim 1, particularly agents that are non-hydroscopic, could be easily identified by one of skill in the art without due experimentation.

Appellant cites case law arguing that Appellant is not required to demonstrate a working example of each and every agent within the limitation of the claims: "In satisfying the enablement requirement, an application need not teach, and preferably omits, that which is well-known in the art." Appellant also argues that the Examiner is

requiring the Appellant to limit the scope of the instantly claimed invention to one agent, specifically mannitol. Appellant's assertion is not factual. The Examiner's determination that undue experimentation would have been needed to make and use the full scope of the claimed invention was not based on a single, simple factual determination. Rather, the Examiner's conclusion was reached by weighing all of the above noted factual considerations in *In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404. These factual considerations are discussed more fully in MPEP § 2164.08 (scope or breadth of the claims), § 2164.05(a) (nature of the invention and state of the prior art), § 2164.05(b) (level of one of ordinary skill), § 2164.03 (level of predictability in the art and amount of direction provided by the inventor), § 2164.02 (the existence of working examples) and § 2164.06 (quantity of experimentation needed to make or use the invention based on the content of the disclosure). Contrary to Appellant's arguments, the Examiner has clearly established that the specification as originally filed did not fully satisfy the enablement requirement of 35 U,S.C. § 112, first paragraph, because all of the most relevant Wands factors were properly addressed and properly analyzed to support a conclusion of non-enablement of the invention, as broadly claimed by Appellant's in the Final Rejection. Nonetheless, in reviewing each of the factors analyzed by the Examiner, Appellant disagrees that undue experimentation is required to make and/or use the presently claimed invention:

Nature of the Invention. Appellant does not address this factor as applied by the Examiner under the *Wands* analysis.

Breadth of the Claims. Appellant argues that one skilled in the art of biochemistry would be familiar with the kinds of agents which would increase the secretion of fluid into a breast duct. The premise of Appellant's argument is based on the notion that by examining the agents listed in the Markush group of Claim 1, the skilled artisan could easily conclude that the administration of high molecular weight hydroscopic agents into a breast would 'potentially' increase the amount of ductal fluid within the breast duct. Hence, Appellant submits that the scope of the claims is not as broad as indicated in the previous Office action.

Appellant's argument has been fully considered but found neither persuasive nor commensurate in scope to the claimed invention. In the instant case, Appellant is reminded that the claimed invention is not limited to a method of increasing the amount of ductal fluid within the breast duct of a patient by intraductally administering an agent selected from the Markush group recited in Claim 1. At present, the subject matter of the claimed invention is directed not only to a method for increasing retrievable intraductal fluid from a breast duct of a patient but also to a method for increasing retrievable intraductal cells and/or other material from a breast of a patient comprising intraductally administering a claim-designated agent which increases secretion of ductal fluid into a breast duct. Moreover, other than the aforementioned high molecular weight hydroscopic agents, a great majority of the agents recited in the Markush group of Claim 1 constitute unlimited possibilities of compounds or molecules, which may not necessarily constitute high molecular weight, hydroscopic agents. Therefore, the breadth of the claims is indefinite. Given the foregoing, the claims are still deemed

broad in that any and all amounts of the claim-designated agents as recited in the Markush of group Claim 1 are intraductally administered to a patient to provide a method for increasing retrievable intraductal fluid, cells and/or other material from a breast duct of a patient, wherein the intraductal administration of the claim-designated agents increases secretion of ductal fluid into a breast duct. The complex nature of the subject matter of the invention is clearly exacerbated by the breadth of the claims.

Predictability and the State of the Prior Art. Appellant argues that the arguments set forth in the previous Office action are not relevant to the claimed subject matter because the claims are not directed toward agents which increase the amount of fluid in a breast duct but instead are directed to a method of increasing fluid in a breast duct by administering certain agents which have particular physiological characteristics. Additional arguments are directed to the idea that the specification, by example, provides sufficient guidance to make and use the claimed method. Thus, Appellant concludes that the enablement requirement is met.

Contrary to Appellant's arguments, the Examiner's conclusion of scope of enablement of the claimed invention under the *Wands* analysis of the present factor is proper and undeniably relevant. Respectfully, Appellant is directed to MPEP § 2164.03 (level of predictability in the art and amount of direction provided by the inventor) wherein this particular consideration is more fully discussed, and provided herein for convenience:

> 2164.03 [R-2] Relationship of Predictability of the Art and the Enablement

Requirement
The amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art. In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). The "amount of guidance or direction" refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification. In contrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need more detail as to how to make and use the invention in order to be enabling. >See, e.g., Chiron Corp. v. Genentech Inc., 363 F.3d 1247, 1254, 70 USPQ2d 1321, 1326 (Fed. Cir. 2004) ("Nascent technology, however, must be enabled with a specific and useful teaching.' The law requires an enabling disclosure for nascent technology because a person of ordinary skill in the art has little or no knowledge independent from the patentee's instruction. Thus, the public's end of the bargain struck by the patent system is a full enabling disclosure of the claimed technology." (citations omitted)).<

The "predictability or lack thereof" in the art refers to the ability of one skilled in the art to extrapolate the disclosed or known results to the claimed invention. If one skilled in the art can readily anticipate the effect of a change within the subject matter to which the claimed invention pertains, then there is predictability in the art. On the other hand, if one skilled in the art cannot readily anticipate the effect of a change within the subject matter to which that claimed invention pertains, then there is lack of predictability in the art. Accordingly, what is known in the art provides evidence as to the question of predictability. In particular, the court in In re Marzocchi, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971), stated:

[I]n the field of chemistry generally, there may be times when the well-known unpredictability of chemical reactions will alone be enough to create a reasonable doubt as to the accuracy of a particular broad statement put forward as enabling support for a claim. This will especially be the case where the statement is, on its face, contrary to generally accepted scientific principles. Most often, additional factors, such as the teachings in pertinent references, will be available to substantiate any doubts that the asserted scope of objective enablement is in fact commensurate with the scope of protection sought and to support any demands based thereon for proof. [Footnote omitted.]

The scope of the required enablement varies inversely with the degree of predictability involved, but even in unpredictable arts, a disclosure of every operable species is not required. A single embodiment may provide broad enablement in cases involving predictable factors, such as mechanical or electrical elements. In re Vickers, 141 F.2d 522, 526-27, 61 USPQ 122, 127 (CCPA 1944); In re Cook, 439 F.2d 730, 734, 169 USPQ 298, 301 (CCPA 1971). However, in applications directed to inventions in arts where the results are unpredictable, the disclosure of a single species usually does not provide an adequate basis to support generic claims. In re Soll, 97 F.2d 623, 624, 38 USPQ 189, 191 (CCPA 1938). In cases involving unpredictable factors, such as most chemical reactions and physiological activity, more may be required. In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970) (contrasting mechanical and electrical elements with chemical reactions and physiological activity). See also In re Wright, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993); In re Vaeck, 947 F.2d 488, 496, 20 USPQ2d 1438, 1445 (Fed. Cir. 1991). This is because it is not obvious from the disclosure of one species, what other species will work.
2164.04 [R-1] Burden on the Examiner Under *>the< Enable

Although fully considered, Appellant's argument is not found persuasive for the following reasons. While Appellant reasonably argues that the specification discloses intraductal injection of an agent that increases secretion of ductal fluid into a breast duct to provide a method of increasing retrievable intraductal fluid; and, while Appellant reasonably argues that the specification discloses guidance as how to intraductally administer an agent to a patient and measure the amount of fluid obtained, nowhere in the specification as originally filed does Appellant set forth any guidance for determining which of the myriad of possible disclosed compounds and/or molecules as either a non-liquid, a gel, an emulsion, a gas or a semi-solid, or even as a solution or a colloid or ductal orifice dilator or natural herb extract (just to name a few) constitute operable embodiments for affecting the functional effect of increasing secretion of ductal fluid into a breast duct of a patient upon ductal administration. Despite Appellant's argument, the specification as originally filed fails to disclose administering certain agents which have any 'particular physiological characteristics'. Nowhere in the specification does Appellant set forth any indication that one or more class of any of the claim-designated agents have a physiological characteristic that is distinct or separate from any other of the other limitless possibilities of claim-designated compounds or molecules (organic molecules), which may potentially be considered as an agent that increases ductal fluid secretion.

Thus, the Office maintains that while it may possible that particular agents recited in the Markush group of Claim 1 would increase the secretion of ductal fluid into a breast duct of a patient, it is highly unlikely that any and all of the claim-designated

agents in any and all amounts could increase secretion of ductal fluid into a breast duct, especially given the state of the prior art at the time the invention was made and the limited guidance of the disclosure.

The Level of One of Ordinary Skill in the Art at the Time of Invention. The Examiner agrees with Appellant's statement that the level of one of ordinary skill in the art at the time the invention was made would be that of a person holding an advanced scientific degree.

Amount of Experimentation Necessary: The Quantity of Experimentation Need to Make and/or Use the Invention.

Appellant alleges, "The statement by the Examiner that there is no working example providing data is factually incorrect. [as set forth in the previous Final Office Action dated March 14, 2007, page 7]". Clearly, Appellant has misinterpreted the language set forth in the previous Office action. Appellant is invited to revisit the Examiner's determination, but repeated immediately below for convenience:

"There is no guidance in the specification, other than the administration of effective amounts of mannitol to increase ductal fluid secretion from a breast duct. Moreover, the instant application does not provide a working example providing data which shows that the compositions of the instant claims would indeed increase secretion of fluid into a breast duct of a patient comprising the administration of any and all of the claim-designated agents in any and all amounts. Thus, Applicant has not demonstrated that any and all of the claim-designated agents have the claimed functional effect of increasing secretion of ductal fluid into a breast duct of a patient when intraductally administered to provide the instantly claimed method as broadly claimed, other than the aforementioned intraducal administration of effective amounts of mannitol. Accordingly, it would take undue experimentation without a reasonable expectation of success for one skill in the art to make and/or use the method as broadly claimed by Applicant."

Again, Appellant relies on the single disclosed example in the specification describing an experimental protocol for the administration of an agent, namely mannitol, into a breast duct to increase ductal fluid secretion. Thereby, Appellant argues that the skilled artisan would be able to arrive easily at the determination of which agents are operable to carry out the claimed invention without undue experimentation because the specification provides a reasonable amount of guidance. Appellant's arguments have been fully considered but not found persuasive. Contrary to Appellant's arguments, the quantity of experimentation necessary to carry out the claimed invention is indeed high, as the skilled artisan could not rely on the prior art or instant specification to make and/or use the instantly claimed method, comprising the intraductal administration of any and all of the claim-designated agents in any and all amounts to the breast duct of a patient to provide the functional effect of increasing secretion of ductal fluid into a breast duct. Therefore, the full scope of the claims are not considered to be enabled by the specification.

In conclusion, Appellant finally argues, "During the factual examination of the specification, the Examiner made a number of incorrect assumptions and assertions including overstating the breath of the claims, incorrectly characterized the predictability and the state of the prior art, and providing no evidence that any experimentation necessary to perform the method of the present invention would be undue. Analysis of the Wands factors previously mentioned clearly shows that considering all the evidence related to each of these factors, and based on the evidence as a whole, favors a

conclusion that one of skill in the art could practice the claimed invention without undue experimentation." The Examiner respectfully disagrees. The Examiner's complete analysis of the claimed invention with regard to all of the relevant *Wands* factors fully support a conclusion of lack of enablement, as broadly claimed by Appellant.

Accordingly, a sufficient number of reasons have been given to arrive at a conclusion that the specification, while being enabling for a method of increasing retrievable of fluid, cells and/or other material from a breast duct of a patient comprising administering intraductally to the patient an effective amount of a limited number of agents, such as mannitol and those agents recited in Claims 23, 24, 25 and 27, which would increase the secretion of ductal fluid into a breast duct, does not reasonably provide enablement for the instantly claimed method comprising the intraductal administration of any and all amounts of any and all of the agents recited in the Markush group of Claim 1. Therefore, in view of the breadth of the claims, the limited guidance of the specification as to how carry out the claimed invention, the lack of correlative working examples, and the state of the art at the time the specification was filed, the Examiner maintains that other than the aforementioned embodiments the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims, as broadly claimed by Appellant.

With respect to the rejection of Claims 1, 6, 22, 25 and 27 made under 35 U.S.C. 102(b) as being anticipated by Martyn et al. made evident by the teachings of Kartinos et al. and Mullins, Appellant argues that the cited reference does not teach or suggest a method of using a nonabsorbable biocompatible solution to increase retrievable ductal fluid from a breast duct. Appellant also argues that the Examiner's reliance on the teachings of Martyn et al. is misplaced because there is no evidence presented by the Examiner that the cited reference teaches or suggest that the intraductal administration of prolaction increases intraductal fluid: "Martyn et al. teaches that the administration of prolactin increases fatty acid and glycerolipid synthesis."

Appellant's arguments have been fully considered but found unpersuasive because Martyn et al. teach, "In addition, intraductal injection has been used to administer prolactin into individual gland sectors, which then secrete milk without affecting the uninjected glands of the same rabbit [citation omitted]." *See* page 321, column 1, last line bridging column 2, line 3. Moreover, on page 327, column 1, lines 7-16, Martyn et al. expressly teaches, "Prolactin, when given by mammary intraductal injection, localized in the injected gland and induced lactation, as evidenced by visible milk in injected ducts [citations omitted] without effect on the adjacent glands. In the present study, on day 3 after intraductal injection of prolactin, a significant increase in enzymes necessary for the synthesis of fatty acids (Table 3) and a significant increase in overall synthesis of fatty acids from acetate was observed."

Secondly, Appellant argues that there is no evidence that Blue Dextran mixed with Phosphate-buffered saline as a nonabsorbable biocompatible agent when

administered to a breast duct increases secretion of ductal fluid into the breast duct. Appellant further argues the claimed invention is directed to the intraductal administration of a nonabsorbable biocompatible agent which when administered to the breast duct increases secretion of ductal fluid into a breast duct. Therefore, Appellant argues that the Examiner cannot rely on Martyn et al. to provide an anticipatory rejection of the claimed subject matter because the nonabsorbable biocompatible solution in Martyn et al. is made by dissolving prolaction in NaOH and diluting with phosphate buffered saline containing Blue Dextran. Finally, Appellant argues,"The Examiner cannot recite a prior art reference that contains two agents (prolactin and Blue Dextran) and then argue that both agents are acting as one for the purposes of anticipation."

Appellant's arguments have been thoroughly considered but not found persuasive or commensurate in scope to the limitations of the claimed invention because nowhere in the claims as presently drafted does Appellant preclude the use of more than one agent or more than one type of agent as set forth in the Markush group recited in Claim 1 for the purpose of providing the beneficial functional effect of increasing secretion of ductal fluid into a breast duct.

The reference teaches the claimed subject matter.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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